A. providing a hydrogen containing fuel to the anode and an oxygen containing oxidant to the cathode to generate, for a first period of time, an electric current within the external circuit for operating the primary electricity using device, the cell operating conditions being selected such that, during the course of said first period of time, the cathode potential is maintained above 0.66 volt and cell performance decreases;

B. regenerating the cell after Step A by a) providing a hydrogen containing fuel to the anode while operating said cell using procedures selected to reduce the cathode potential to below 0.50 volt, said procedures including the steps of i) disconnecting the primary electricity using device from the external circuit and leaving the circuit open, and ii) stopping the flow of oxidant to the cell and allowing the oxidant remaining within the cell to be consumed at the cathode; and, b) maintaining the cathode potential below the said 0.50 volt for a second period of time sufficient to essentially restore the cell performance decrease which occurred during the course of Step A; and,

C. sequentially repeating Steps A and B to reduce the decrease in cell performance over time.

21. A method of operating a fuel cell having a PEM as the electrolyte, an anode on one side of the PEM, a cathode on the other side of the PEM, an external electric circuit connecting the anode and cathode,

and a primary electricity using device within the external circuit, comprising the steps of

A. providing a hydrogen containing fuel to the anode and an oxygen containing oxidant to the cathode to generate, for a first period of time, an electric current within the external circuit for operating the primary electricity using device, the cell operating conditions being selected such that, during the course of said first period of time, the cathode potential is maintained above 0.66 volt and cell performance decreases;

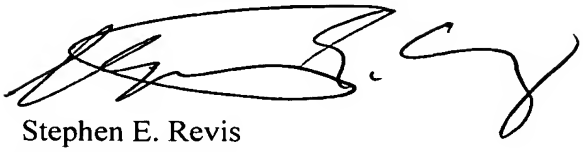
B. regenerating the cell after Step A by

a) providing a hydrogen containing fuel to the anode while operating said cell using procedures selected to reduce the cathode potential to below 0.50 volt, said procedures including the steps of i) disconnecting the primary electricity using device from the external circuit, and ii) with an auxiliary resistive load connected across the cell, stopping the flow of oxidant to the cell and allowing the oxidant remaining within the cell to be consumed at the cathode creating a current flow through the auxiliary resistive load; and, b) maintaining the cathode potential below the said 0.50 volt for a second period of time sufficient to essentially restore the cell performance decrease which occurred during the course of Step A; and,

C. sequentially repeating Steps A and B to reduce the decrease in cell performance over time.

In compliance with 37 CFR 1.173(c), attached hereto is a statement of status and support for claims 20 and 21.

Respectfully submitted,



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STATEMENT OF STATUS AND SUPPORT FOR CHANGES TO CLAIMS
UNDER 37 CFR 1.173(c)

Claims 1 and 2 are pending.
Claims 3-7 are cancelled.
Claims 8-19 are pending.
Claim 20 has been added and is pending. This claim is the same as claim 10, except in step B(i) the requirement for connecting an auxiliary resistive load in place of the primary electricity using device has been deleted, and instead step B(i) now reads: "...disconnecting the primary electricity using device from the external circuit and leaving the circuit open,..." This language is supported in US Patent 6,399,231 in column 8, lines 40-44.

Claim 21 has been added and is pending. Support for this claim is found in US Patent 6,399,231 in the description of the embodiment shown in Fig. 4, beginning in column 9, line 23, through Table 3, and especially at column 9, lines 38-50, wherein regeneration occurs after the oxidant flow to the cathode is discontinued, the primary resistive load is disconnected, and while an auxiliary load is connected across the cell.